

Letters to the Editor

The Editor does not hold himself responsible for opinions expressed by his correspondents. He cannot undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.

NOTES ON POINTS IN SOME OF THIS WEEK'S LETTERS APPEAR ON P. 804.

✓ CORRESPONDENTS ARE INVITED TO ATTACH SIMILAR SUMMARIES TO THEIR COMMUNICATIONS.

Vitamin Nature of Flavones

IN a previous note¹ we reported on the favourable effect of flavones upon the resistance and permeability of the capillary wall in certain pathological conditions.

death. They show the usual rapid fall after the second week of the experiment, death occurring on average at 28.5 days. The weight declines on the average from 359 gm. to 242 gm.

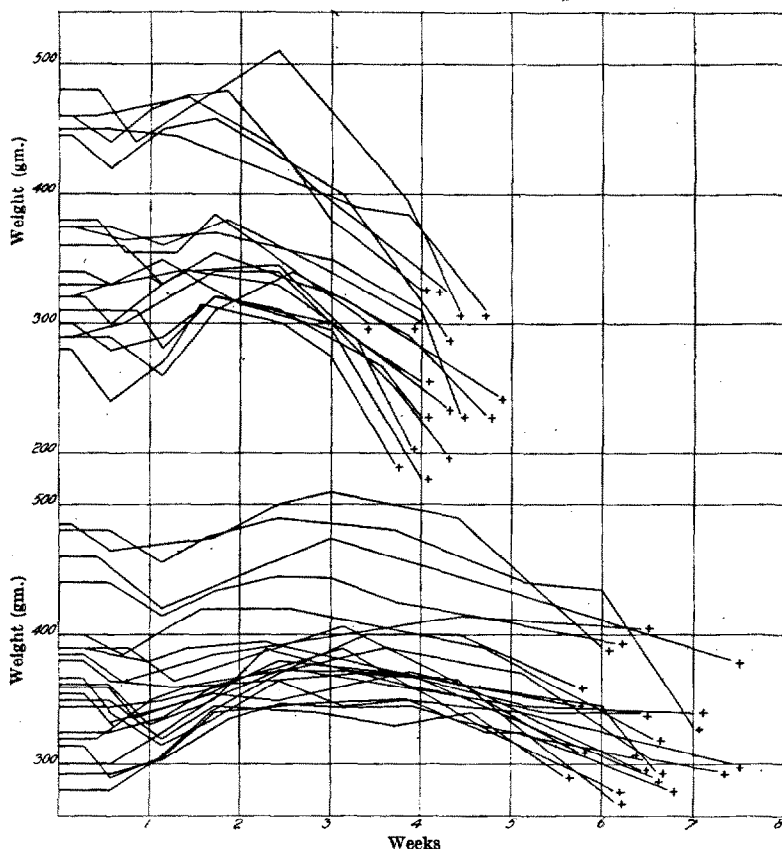


FIG. 1. Weight curves of guinea pigs receiving a scurvy diet without (above) and with (below) the addition of 'Citrin'.

The substances responsible for this activity were tentatively termed 'vitamin P'. The acceptance, however, of the vitamin nature of these dyes depended on the experimental demonstration of the symptoms of deficiency.

Thirty-eight guinea pigs, weighing 280–485 gm., were placed on the Sherman–La Mer–Campbell scurvy diet. The components of the food were autoclaved for one hour and a half at 120° C., ammonia being added to the water of the autoclave. Twenty-one of the animals received 1 mgm. 'Citrin'² daily, this substance being the crystalline flavone fraction of lemon juice. A smaller additional group of animals received mixed food.

The weight curves of the animals (17), receiving the scurvy diet only, are represented in the upper part of Fig. 1. The curves of the animals end with

The data of the second group, receiving 'Citrin', are represented in the lower part of Fig. 1. The administration of flavone was discontinued at the end of the sixth week. Compared with the first group, these animals live distinctly longer, on the average 44 days. At 34–38 days no animal from this group had died, while all animals in the first group were dead. There is also a marked difference in the weight curves, which fail to show the pre-mortal rapid decline, the average weight of 365 gm. falling to 342 gm. only.

Since the food contained no ascorbic acid, the animals could not be expected to live indefinitely. All the animals of both groups showed the typical clinical symptoms of scurvy. On autopsy all the animals showed the typical fragility of bones, looseness of teeth and swelling of joints. There was, however, a very marked difference in the intensity of hæmorrhages in both groups. In our protocols the hæmorrhages were noted, according to their extent, by one, two or three crosses. The relation of the number of crosses given per 100 animals in the first and second group was 212 to 68 for hæmorrhages of the costal joints, 77 to 14 for intestinal hæmorrhages, 224 to 71 for different articular hæmorrhages, and 178 to 33 for hæmorrhages in the muscles. The vitamin P seems thus to have a marked and somewhat specific influence on the capillary

system. This agrees with our clinical observations.

A third and smaller group of animals, receiving mixed food, showed normal growth. A preliminary experiment with half the number of animals gave identical results.

These results suggest that experimental scurvy, as commonly known, is a deficiency disease caused by the combined lack of vitamin C and P.

This research was sponsored by the Josiah Macy, Jr., Foundation, New York.

A. BENTSÁTH.
Institute of Medical Chemistry St. RUSZNYÁK.
and the Medical Clinic, A. SZENT-GYÖRGYI.
Szeged.

¹ NATURE, 138, 27 (July 4, 1936).

² Deut. Med. Wochsch., Nr. 33, 1325 (1936).